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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/780,375	02/12/2001	Christoph Hauger	00014	7035

7590 01/04/2007  
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EXAMINER

FINEMAN, LEE A

ART UNIT	PAPER NUMBER
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2872

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/04/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/780,375	HAUGER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Lee Fineman	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 16-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/12/01 & 10/6/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 21 November 2006 has been entered in which claims 16 and 23 have been amended and claim 29 has been added. Claims 16-29 are pending.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 23 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pensel et al., US 5,867,308 in view of De Forest et al., US 4,502,075.

Regarding claims 23 and 26, Pensel et al. disclose a surgical microscope (figs. 1-3) comprising a viewing unit (defined by 8, 14, and 18) for viewing an object (O) and defining a viewing beam path (figs. 1-3); an image projection module (2 and 7) for inputting image data into the viewing unit (column 5, lines 26-28), including an image display unit (2) for displaying the image data; and said image projection module includes a beam splitter (10) mounted in said viewing beam path; an image recording module (19 and 26) for recording an image of said object

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supplied by said viewing unit and including an image sensor (26) mounted to receive said image data from said image projection module and generating an image signal from said image data and from said image of the object (fig. 1, in at least so far as the image signal is sent to computer 24); an image recording beam splitter (see, e.g., 28, fig. 4 and column 7, lines 8-15) mounted in said viewing beam path for directing said image of the object onto said image sensor; a recording device (19) connected to said image sensor for receiving said image signal and recording said image data and said image of said object (fig. 1); and a device (24) for synchronizing the illumination of said image display unit with said image sensor to avoid flickering (see column 5, lines 60- 67). Pensel et al. disclose the claimed invention except for said image sensor generating the image signal for display on a monitor. De Forest et al. teach a microscope (fig. 2) with an image sensor (22) that generates an image signal from said image data (from 30) and from said image of the object (18) and for display on a monitor (34, also see column 5, line 22). It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the monitor of De Forest et al. to the system of Pensel et al. to provide easy viewing for observers of the surgical procedure.

4. Claims 24, 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pensel et al in view of De Forest et al. as applied to claims 23 and 26 above and further in view of Mercado, US 5,969,803.

Regarding claims 24 and 27, Pensel et al. further disclose that the imaging optics (7) are mounted downstream of said image display unit (2) and are arranged between said image display unit (2) and said beam splitter (10). Pensel et al in view of De Forest et al. as applied to claims

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23 and 26 above disclose the claimed invention except for the specifics of the imaging optics for projecting the image, i.e., said image projection module including a first and second plano-convex lens, a plano-concave lens, and a concave-convex lens. Mercado teaches a projection lens assembly (fig. 1A) for a microscope with a first (L4) and second (L14) plano-convex lens, a plano-concave lens (L8 or L9), and a concave-convex lens (L10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the projection lens assembly of Mercado in the system of Pensel et al in view of De Forest et al. to provide enhanced aberration correction (Mercado, column 3, line 6).

Regarding claim 25, Pensel et al. in view of De Forest et al. and Mercado as set forth above disclose the claimed invention except for the ratio of said first focal length and said second focal length being within a range from 1.9 to 2.5. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have focal lengths within the claimed ratio, since it is been held that discovering an optimum value of a result effective variable involves only routine skill in the art. One would have been motivated to adjust the focal lengths for the purpose of adjusting the size/magnification of the projected image. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) See also *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

5. Claims 28 and 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pensel et al. in view of De Forest et al. as applied to claim 23 above and further in view of Ernststoff et al., US 4,090,219.

Pensel et al. in view of De Forest et al. as applied to claim 23 above disclose the claimed invention except for the image display unit including a reflection display and wherein the brightness of said image display unit is increased by a time-dependent sequential illumination of the reflection display with only a single color or a reflection display illuminated sequentially with different colors as a function of time. Ernstoff et al. teach in fig. 8, a reflection display (310, column 2, lines 57-58) illuminated sequentially with different colors as a function of time (column 8, lines 48-56) or illuminated sequentially with a single color as a function of time (in so far as the wheel can be stopped on a single color and, inherently, if more time is spent on a single color, it will be brighter than compared to a display exposed to sequential RGB illumination). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the reflection display of Ernstoff et al. as the display means in the system of Pensel et al. in view of De Forest et al. to be able to provide high resolution and high brightness full color images (Ernstoff, column 2, lines 24-26).

6. Claims 16, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pensel et al. in view of De Forest et al. as applied to claims 23 and 26 above in view of Spink et al., US 5,953,114.

Pensel et al in view of De Forest et al. as applied to claims 23 and 26 above disclose the claimed invention except for said recording device including an image mixer for receiving both said image data and said image of said object as electronic image data and for mixing said electronic image data therein; and wherein said image projection module has an input for receiving said image data as electronic image data and said image mixer is connected directly to

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said input for receiving said image data as said electronic image data applied to said input. Spink et al. teach a surgical microscope (see figs. 2 and 12) including an image projection unit (10b) and an image recording module (at least 90 and 9). Spink et al. further teach that one can electronically combine the data with an image mixer (89, fig. 12) via inputs for providing an electronic mixed image (see column 13, lines 20-54). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the images electronically with an image mixer as suggested by Spink et al. to be able to provide better control of the images, e.g. size, (Spink, column 13, line 26-32).

7. Claims 17, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pensel et al. in view of De Forest et al. and Spink et al. as applied to claim 16 above and further in view of Mercado.

Regarding claims 17 and 20, Pensel et al in view of De Forest et al. and Spink et al. as applied to claim 16 further disclose (see Pensel) that the imaging optics (7) are mounted downstream of said image display unit (2) and are arranged between said image display unit (2) and said beam splitter (10). Pensel et al. in view of De Forest et al. and Spink et al. as applied to claim 16 disclose the claimed invention except for the specifics of the imaging optics for projecting the image, i.e., said image projection module including a first and second plano-convex lens, a plano-concave lens, and a concave-convex lens. Mercado teaches a projection lens assembly (fig. 1A) for a microscope with a first (L4) and second (L14) plano-convex lens, a plano-concave lens (L8 or L9), and a concave-convex lens (L10). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the projection lens

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assembly of Mercado in the system of Pensel et al in view of De Forest et al. and Spink et al. to provide enhanced aberration correction (Mercado, column 3, line 6).

Regarding claim 18, Pensel et al. in view of De Forest et al., Spink et al. and Mercado as set forth above disclose the claimed invention except for the ratio of said first focal length and said second focal length being within a range from 1.9 to 2.5. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have focal lengths within the claimed ratio, since it is been held that discovering an optimum value of a result effective variable involves only routine skill in the art. One would have been motivated to adjust the focal lengths for the purpose of adjusting the size/magnification of the projected image. *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977) See also *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

8. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pensel et al. in view of De Forest et al. and Spink et al. as applied to claim 16 above and further in view of Ernststoff et al.

Pensel et al. in view of De Forest et al. and Spink et al. as applied to claim 16 disclose the claimed invention except for the image display unit including a reflection display and wherein the brightness of said image display unit is increased by a time-dependent sequential illumination of the reflection display with only a single color. Ernststoff et al. teach in fig. 8, a reflection display (310, column 2, lines 57-58) illuminated sequentially with a single color as a function of time (in so far as the wheel can be stopped on a single color and, inherently, if more time is spent on a single color, it will be brighter than compared to a display exposed to sequential RGB



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illumination). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the reflection display of Ernstoff et al. as the display means in the system of Pensel et al. in view of De Forest et al. and Spink et al. to be able to provide high resolution and high brightness full color images (Ernstoff, column 2, lines 24-26).

### *Response to Arguments*

9. Applicant's arguments, see pages 8-9, filed 21 November 2006, with respect to the rejection(s) of claim(s) 16-22 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Spink et al.

10. Applicant's arguments filed 21 November 2006 with regard to synchronizing (see page 10 of remarks) have been fully considered but they are not persuasive.

Applicant argues that Pensel does not "synchronize" the illumination of the image display unit with said image sensor to avoid flickering. The examiner respectfully disagrees. As stated in the last office action, an LCD as taught by Pensel does not flicker, so flickering would be avoided regardless of synchronicity. Further the data processor (24) further synchronizes the external images to the display (2) and the image currently obtained from the sample to provide the appropriate superimposed images for clear viewing by the user (see column 5, lines 60- 67).

*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lee Fineman whose telephone number is (571) 272-2313. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



LAF  
22 December 2006

  
MARK A. ROBINSON  
PRIMARY EXAMINER